BAY CITY STATE RECREATION AREA

Wetlands, Waders & Waterfowl

Level: 3rd & 4th Grades

PROGRAM DESCRIPTION:
This program is designed to introduce students to the wetland birds which make our park and Michigan's wetland habitat a special place to explore! An indoor presentation will cover special adaptations of wetland birds, followed by a lab where students classify bird mounts into family groups based on physical traits. Students will also explore food chains and habits of herons, ducks, geese, loons and swans. This program also incorporates a visit to the bird observation room to practice using a field guide to ID birds at the feeders and a survey of animals in the Jennison exhibit hall. In conclusion, students will take a two-hour hike out to the marsh or the Saginaw Bay to witness the waders and waterfowl in their wetland habitat utilizing binoculars and spotting scope.

PROGRAM GOALS:
To instill in students an awareness and appreciation for wetland habitats and the rich variety of birds which depend upon them.

PROGRAM OBJECTIVES:
1. Students will be able to distinguish between ducks, geese, swans, loons and herons.
2. Students will be able to name one wetland bird and a behavioral trait and a physical trait that it possesses to help it survive.
3. Students will be able to describe how one bird depends upon the food, water, shelter and space it finds in the wetland habitat.
4. Students will be able to draw a simple food chain which includes a wetland bird.
5. Students will be able to identify a bird utilizing physical traits and characteristics.
6. Students will be able to name three reasons why birds need wetlands.

PRE-VISIT SUGGESTIONS:
1. Each student should be dressed for weather conditions, which are generally 10 degrees cooler near the Bay. Wind can be much harsher and a jacket or coat should be worn regardless of weather conditions at your school. Bring a box of trash bags with square bottoms to use as emergency rain ponchos. Shoes should be selected for outdoor exploration and boots worn when weather is snowy or muddy.
2. Discuss characteristics of the bird family.
3. Put a bird feeder up outside your classroom window and make a list of birds which come to it.
4. Look for pictures of different habitats in books or magazines. Have the students list the habitats they find, such as forest, field, desert, lake, pond, marsh, rain forest.

POST-VISIT SUGESTIONS:
1. As a classroom discussion, make a list on a chalkboard of the different birds they saw at the park. Next, list an adaptation for each bird.
2. Compose a class mural of the wetland habitat and have each student draw a wetland wader or waterfowl which lives there.
3. Read the children's story, "She's Wearing a Dead Bird on Her Head" by Kathryn Lasky. Discuss with the students how wetland birds inspired the creation of the Audubon Society.
4. Contact the Michigan Audubon Society and see if they will send you a classroom set of student Audubon activity guides.

5. Project WILD: Adaptation Artistry – students design and create imaginary birds; Color Crazy – students create representations of colorful wild birds; Wildlife is Everywhere – students search their environment for evidence of wildlife.

COORDINATING WITH M.E.A.P. SCIENCE OBJECTIVES:

Constructing New Scientific Knowledge (C) I. 1
e.1, e.3
Reflecting on Scientific Knowledge (R) II.1
e.4
Organization of Living Things (LO) III.2
e.1, e.2, e.3, e.4
Heredity (LH) III.3
e.1
Evolution (LE) III.4
e.2
Ecosystems (LEC) III.5
e.1, e.2, e.3, e.4

COORDINATING WITH BAY CITY PUBLIC SCHOOLS SCIENCE CURRICULUM BENCHMARKS:

Life 2-1, 2-2, 2-3, 2-4
Heredity 3-1
Evolution 3-2

COORDINATING WITH M.E.A.P. SOCIAL STUDIES CONTENT STANDARD BENCHMARKS:

Geographic Perspective
II.1—e.e.2
II.2—e.e.1, e.e.2, e.e.3, l.e.1
II.4—e.e.1, e.e.3, l.e.3, l.e.5
II.5—e.e.1, l.e.1
Inquiry
V.1—e.e.2

Correlating with the Common Core: NGSS Standards

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth,
growth, reproduction, and death. [Clarification Statement: Changes organisms go through during their life form a pattern.] [Assessment Boundary:
Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.]
3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that
variation of these traits exists in a group of similar organisms. [Clarification Statement: Patterns are the similarities and differences in
traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans.] [Assessment Boundary: Assessment does not
include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.]
3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment. [Clarification Statement: Examples
of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little
exercise may become overweight.]
3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same
species may provide advantages in surviving, finding mates, and reproducing. [Clarification Statement: Examples of cause and

effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage
coloration than other animals may be more likely to survive and therefore more likely to leave offspring.]
3-LS2-1. Construct an argument that some animals form groups that help members survive.
3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that
variation of these traits exists in a group of similar organisms. [Clarification Statement: Patterns are the similarities and differences in
traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans.] [Assessment Boundary: Assessment does not
include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.]
3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment. [Clarification Statement: Examples
of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little
exercise may become overweight.]
3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they
lived long ago. [Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments
could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.] [Assessment Boundary: Assessment does not
include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.]
3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same
species may provide advantages in surviving, finding mates, and reproducing. [Clarification Statement: Examples of cause and
effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage
coloration than other animals may be more likely to survive and therefore more likely to leave offspring.]
3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive
less well, and some cannot survive at all. [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms
and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]
3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of
plants and animals that live there may change.* [Clarification Statement: Examples of environmental changes could include changes in land
characteristics, water distribution, temperature, food, and other organisms.] [Assessment Boundary: Assessment is limited to a single environmental change.
Assessment does not include the greenhouse effect or climate change.]
4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support
survival, growth, behavior, and reproduction. [Clarification Statement: Examples of structures could include thorns, stems, roots, colored petals,
heart, stomach, lung, brain, and skin.] [Assessment Boundary: Assessment is limited to macroscopic structures within plant and animal systems.]
4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the
information in their brain, and respond to the information in different ways. [Clarification Statement: Emphasis is on systems of
information transfer.] [Assessment Boundary: Assessment does not include the mechanisms by which the brain stores and recalls information or the mechanisms of
how sensory receptors function.]